

Amendments to the Drawings:

The attached sheet of formal drawing, which include Figs. 1C and 1D, replaces the original sheet including Figs. 1C and 1D.

Attachment: Replacement Sheet

REMARKS

The above amendment with the following remarks is submitted to be fully responsive to the Office Action of March 21, 2005. Reconsideration of this application in light of the amendment and the allowance of this application are respectfully requested.

Referring now to the Office Action, the Examiner set forth an elections requirement identifying six different species in the application. The provisional election made by the Applicant's representative on March 16, 2005 is hereby affirmed. As noted in the Office Action, the invention of Group I is elected. Claims 1, 2, 5, 6, 10-13, 41, and 42 are generic to all of the species. Moreover, claims 4, 14, 16, 17, 19-21, and 25-28 are also readable on the elected species. Correspondingly, claims 3, 7-9, 15, 18, 22-24, 29-40, and 43-48 are withdrawn from further consideration as being drawn to a non-elected species. In addition, in response to the Office Action, claims 1, 12, 13, 16, 27, 28, and 41 have been amended while claims 2, 4, 6, 10, 11, 25, and 26 have been canceled. New claims 49-51 have been added which are readable on the elected species. Therefore, claims 1, 3, 5, 7-9, 12-24, and 27-51 are still pending in the present application.

Referring again to the Office Action, Figure 1D was objected to because the reference numeral 24 which points to the body should be corrected to -- 14 --. In response thereto, the corrected drawing sheet is submitted herewith. Therefore, the acceptance of corrected drawing sheet and the withdrawal of this objection is respectfully requested.

In the Office Action, claims 1, 2, 4, 5, 14, 16, 17, 19, 20, and 41 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,520,155 to Boecking. In addition, claims 1, 2, 4, 5, 6, 14, 16, 17, 19, 20, 21, 41, and 42 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,637,407 also to Boecking. In response thereto, independent claims 1, 16, and 41 have been amended to specifically recite that the alloy steel comprises by weight, up to 5.5% chromium, up to 1.5% molybdenum, and up to 1% vanadium. In addition, claim 1 has been further amended to specifically recited that the groove included in the first passage has an annular shape with a diameter that is larger than a diameter of the first passage to thereby preferably circumscribe the first passage, and to recite that the opening of the second passage is transversely offset in the groove so that the central axis of the second passage does not

intersect the longitudinal axis of the first passage. Clearly, the cited references fail to disclose the invention now specifically recited in the amended claims 1, 16, and 41. Correspondingly, the withdrawal of these rejections based on 35 U.S.C. 102 is respectfully requested.

Referring again to the Office Action, claims 6, 21, and 42 were rejected under 35 U.S.C. 103(a) as being unpatentable over '155 Boecking reference in view of the '407 Boecking reference or U.S. Patent No. 6,223,726 to Jung et al. This rejection with respect to claim 6 is believed to be rendered moot in view of cancellation thereof. In addition, this rejection with respect to claims 21 and 42 are believed to be rendered moot in view of their dependency upon claims 20 and 41 which are believed to be in a condition for allowance. Therefore, the withdrawal of this rejection is respectfully requested.

Referring again to the Office Action, claims 10, 11, 13, 25, 26, and 28 were rejected under 35 U.S.C. 103(a) as being unpatentable over either of the Boecking references, in view of either JP 2002-241922 to Yasusaka et al. or JP 07-286256 to Ishikawa et al. In the Office Action, the Examiner concedes that the Boecking references fail to disclose the material composition of the rail. The Examiner then asserts that because the two Japanese references disclose a steel alloy having Cr, Mo, and V, it would have been obvious to drive the present invention.

Initially, it is noted that claims 10, 11, 25, and 26 have been cancelled above so that rejection of these claims are believed to be rendered moot. Turning to the substantive rejection as being possibly applicable to the above amended independent claims 1 and 16, the Applicant's respectfully disagree for the reasons discussed below. The cited Japanese references show a steel alloy having Cr, Mo, and V and were submitted to the Examiner by the Applicants. It is respectfully noted that there is no teaching in these references or other motivations to combine either of the Boecking references with either of the two Japanese references as now suggested by the Examiner. It is further noted that there are multitudes of alloy steel compositions that are known for increasing fatigue strength. However, the Applicants have uncovered the unexpected benefits of applying the recited composition to a juncture for changing direction of a fuel flow in a high pressure fuel injection system which is not known in the art, or otherwise suggested in the cited references. The Applicant's have found that the recited composition of the steel alloy is

superior and especially suited for high pressure stress cycling that is experienced by junctures of fuel injection systems. The combination of providing a juncture having the recited geometry, together with the alloy steel having the material composition recited yielded an unexpected result of dramatically increasing the durability of the high pressure fuel injection system, which is greater than that would be expected by the mere teachings of the recited references even if these references were combined, although there is no motivation to do so. Correspondingly, the withdrawal of this rejection is respectfully requested.

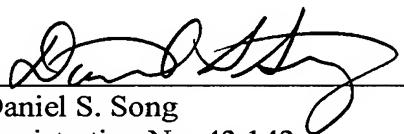
Finally, claims 12 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over either of the Boecking references in view of either of the Japanese references, and further in view of U.S. Publication No. 2005/0005910 to Usui et al. The Examiner relies upon Usui et al. to teach a common fuel rail being heat treated to induce martensite to increase hardness and tensile strength. This rejection is believed to be rendered moot in view of their dependency on an allowable claim.

In addition, in contrast to the Examiner's assertion, martensite described in the cited Usui et al. reference is provided on the surface by deposition processing. In this regard, the Examiner's attention is directed to paragraph 21 of Usui et al. which specifically recites that "both hardness and tensile strength are improved by deposition of process induced martensite," and paragraph 22 which specifically recites "both hardness and tensile strength are improved by the deposition of the process induced martensite". Further, paragraph 30 of the cited Usui et al. reference recites an injection system with improved fatigue characteristics is provided by "processed induced martensite deposited in a crossing portion of the branch hole".

In contrast, claims 12 and 27 specifically recite that the alloy steel is treated through a heat treatment cycle to provide a hardened martensitic core. Therefore, even if the cited references are combined in the manner now suggested by the Examiner, such combinations still fails to disclose, teach, or otherwise suggest a juncture for a high pressure fuel injection system as specifically claimed in claims 12 and 27. Correspondingly, the withdrawal of this rejection, and the allowance of claims 12 and 27 are respectfully requested. In this regard, claims 12 and 27 have been amended to depend from claims 1 and 16, respectively.

In view of the foregoing, it is submitted that the present application is in condition for allowance and a notice to that effect is respectfully requested. However, if the Examiner deems that any issue remains after considering this response, he is invited to call the undersigned to expedite the prosecution and work out any such issue by telephone.

Respectfully submitted,



Daniel S. Song
Registration No. 43,143

NIXON PEABODY LLP
401 9th Street, N.W., Suite 900
Washington, D.C. 20004-2128
(202) 585-8000
(202) 585-8080 (Fax)
Customer No. 22204

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